GERAGHTY & MILLER, INC.
Environmental Services

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125 East Bethpage Road
Plainview, New York 11803
516) 249-7600
FAX (516) 249-7610

February 12, 1990

VIA TELECOPIER

Mr. Warren Smull
Monsanto Company
800 N. Lindbergh Blvd.
Mail Code G4WM
St. Louis, MO 63167

Re: Proposal for a Soil Boring Program at Dead Creek, Sector B, Sauget, Illinois (50212NY).

Dear Mr. Smull:

As requested, Geraghty & Miller, Inc. is providing this proposal for an investigation in "Sector B" of Dead Creek. The purpose of the study is to physically and chemically characterize soil conditions and estimate the volume of material above the water table that may be affected by hazardous organic compounds and metals. The data generated from the study will be used to determine the feasibility of excavating the material and disposing of it offsite.

To assess the feasibility of removal, it will be necessary to determine if the material can be disposed offsite in accordance with the USEPA's "land ban" requirements. Physical testing, to determine whether the material is a liquid or solid, and chemical analyses to determine the concentrations of specific compounds are required.

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In general, the Creek area consists of a narrow channel about 5 feet wide which is flanked by a low bank on either side (see Figure 1). The channel and low banks are enclosed by steep banks on either side of the Creek. Because water is likely to have occupied the area nearest the channel most of the time, the majority of the proposed borings will be drilled near

the channel in the pattern shown on Figures 1 and 2. Our field investigation will consist of drilling approximately 60 boreholes and collecting and analyzing of about 180 soil samples. Approximately 20 soil borings will be drilled in the center of the bed itself with the remainder drilled 5 to 20 feet from the channel. Additional boreholes may be drilled if field conditions indicate that additional data is required in a particular area.

Our initial field reconnaissance of the site indicates that the material in the Creek is soil which can be cored. Soil samples will be collected continuously with a split barrel core at each location to the water table which is at approximately 7 feet below grade. All soil samples will be described by a Geraghty & Miller field geologist record sample location, depth, grain size distribution, and color. In addition, each sample will be screened for the presence of volatile organic compounds using a photoionization detection instrument as part of our health and safety protocols.

Although the material in the Creek appears to be "solid", approximately 20 samples chosen by the field geologist will be subjected to the point filter liquids test (USEPA Method 9095) either in the field or laboratory to document that the material is not a liquid. Three core samples from each boring, collected from 0 - 2, 2 to 4 and 4 to 6 feet below grade will be collected for analysis of the "California List" of compounds by the appropriate USEPA method to determine the areal and vertical distribution of chemicals. In addition, approximately 20 samples will be analyzed for reactivity, corrosivity, flammability and EP Toxicity to determine if the material is hazardous according to the RCRA definition. Upon completion of the drilling, each borehole will be sealed will a cement/bentonite grout and the final borehole locations will be surveyed relative to a permanent landmark.

Prior to the start of the field investigation, Geraghty & Miller will develop the necessary work plans including a Quality Assurance Project Plan (QAPP), Field Sampling Plan

(FSP), and Health and Safety Plan (HASP). It should be possible to prepare these documents within 3 weeks after receiving authorization to proceed.

Table 1 provides a cost estimate for preparing the work plans, completing the field investigation and preparing a report detailing the soil boring and analytical program. The estimates in Table 1 assume that the site is accessible to an all terrain vehicle, the work can be done in level C protective equipment and we are not required to hire union personnel. We have also assumed that the field geologist would be supplied by our St. Louis office to minimize travel and expense costs and that Monsanto's ESC would analyze the soil samples.

It will probably be necessary to pump off standing water in the Creek in some areas but we have not had an opportunity to determine costs for this task. Assuming that the water can be pumped to the sewer, and an access point is relatively near, direct pumping is recommended. Alternatively, if a direct discharge is not possible, we could start the boring program and work up to the area where the standing water is located, then transfer the water into the area of the Creek where the boring program has been completed.

If you have any questions or require additional information, please do not hesitate to call.

Respectfully submitted,

GERAGHTY & MILLER, INC.

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Nicholas Valkenburg
Vice President/Project Officer

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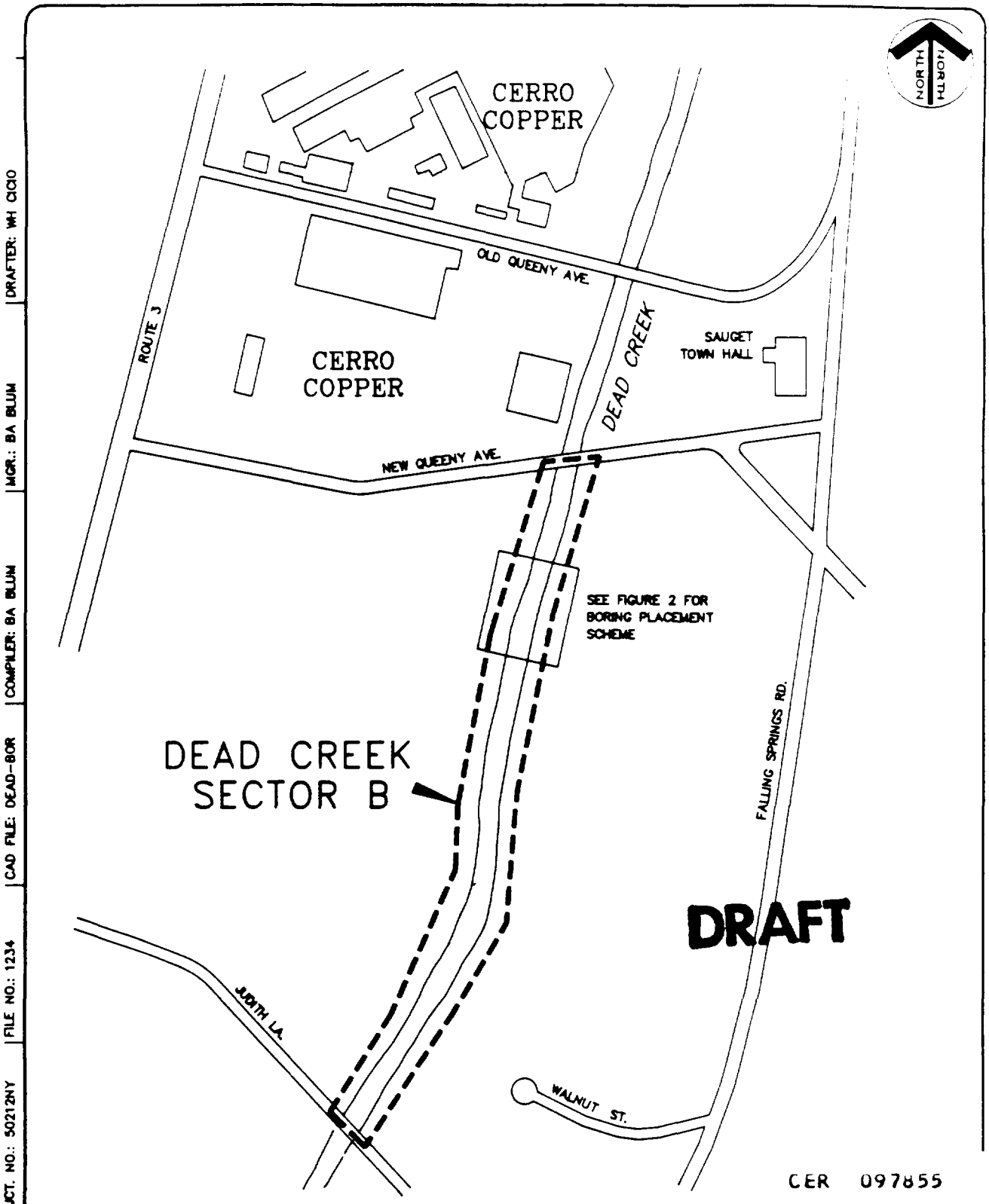

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SCALE 0 500 FT

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LOCATION OF PROPOSED BORINGS AT DEAD CREEK SECTOR B, SAUGET, ILLINOIS

MONSANTO COMPANY SAUGET, ILLINOIS

FIGURE 1

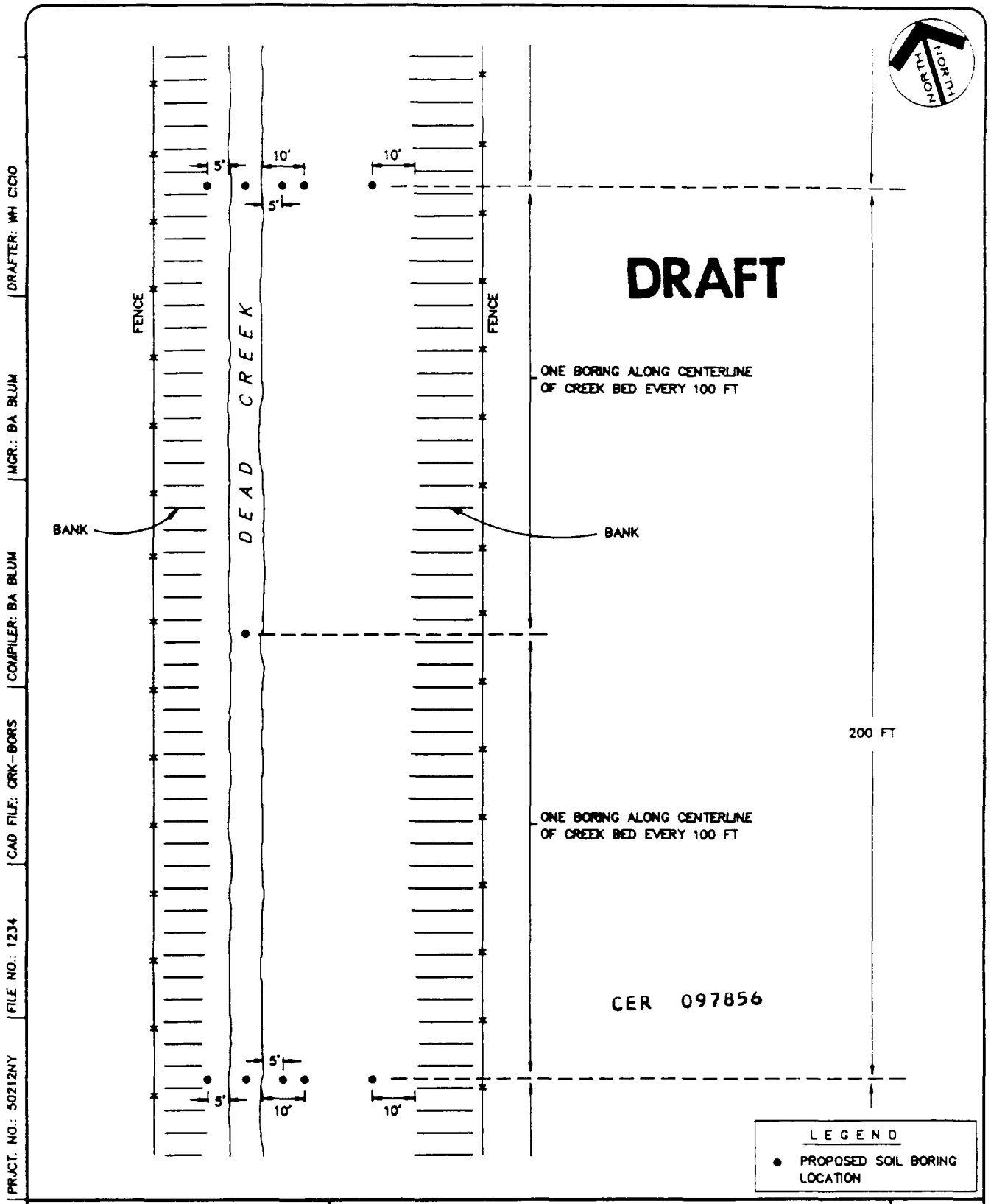

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Table 1. **Estimated Costs for a Soil Boring Program, Monsanto Company, Sauget,Illinois.**

TASK 1: DEVELOPMENT OF QAPP, FSP, AND HASP

Geraghty & Miller, Inc. Fees	
Senior Project Advisor 24 hours at $115 per hour	$ 2,760
Senior Scientist I 100 hours at $83 per hour	8,300
Staff Scientist I 100 hours at $65 per hour	6,500
Admin. Support/Clerical 24 hours at $30 per hour	720
Technical Editor 8 hours at $49 per hour	392
Draftsperson 8 hours at $39 per hour	312
Geraghty & Miller, Inc. Expenses	
(reproduction, telephone, facsimile)	500
Total Task 1:	$ 19,484

TASK 2: FIELD INVESTIGATION AND PROJECT MANAGEMENT

Geraghty & Miller, Inc. Fees

Senior Project Advisor 24 hours at $115 per hour	$ 2,760
Senior Scientist I 40 hours at $83 per hour	3,320
Scientist III 200 hours at $59 per hour	11,800

Geraghty & Miller, Inc. Expenses

Airfare - 1 round trip at $625 per trip	625
Ground Transportation - 1 round trip at $80 per trip	80
Hotel - 1 day at $85 per day	85
Meals - 1 day at $35 per day - 12 days at $5 per day	35 60
Car Rental - 1 day at $75 per day Mileage (Personal Car)	75 315
Supplies: - Miscellaneous (shipping, telephone, facsimilie, safety gear, field supplies)	$ 1,000
Subtotal:	$20,155

Drilling Subcontractor

Mobilization		$ 350
Drilling (Rig, Man power 150 hours x $158/hr		23,700
Materials (cement and bentonite) $5.50 per 47 lb. bag x 100 bags		550
Water Tank and Steam Cleaner $90 per day x 12 days		1,080
Level C Protection $80 per man per day x 2 men x 12 days		1,920
	Subtotal:	$27,600
	5% Service Charge:	$ 1,380
	Subtotal	$28,980

Construction Subcontractor*

Bulldozer (to prepare access) 2 days @ $1500/day)		3,000
Install Gate and repair fence		2,500
	Subtotal:	$ 5,500
	5% Service Charge:	$ 275
	Subtotal	$ 5,775

Task 2 Cost Estimate: $ 54,910

* Note: These estimates are preliminary. More accurate Task 2 Total estimates will be obtained after contacting contractors.

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TASK 3: REPORT PREPARATION

Geraghty & Miller, Inc. Fees

Senior Project Advisor 40 hours at $115 per hour	$ 4,600
Senior Scientist I 80 hours at $83 per hour	$ 6,640
Scientist III 100 hours at $59 per hour	$ 5,900
Draftsman 16 hours at $48 per hour	$ 768
Technical Editor 8 hours at $49 per hour	$ 392
Technician 16 hours at $38 per hour	$ 608
Administrative Support/Clerical 30 hours at $30 per hour	$ 900
Expenses (reproduction, telephone, facsimile)	1,000
Total Task 3:	$ 20,808
PROJECT TOTAL	95,000